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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,799	12/23/2005	Don W. Cochran	PSSZ, 200072US	7382
27885	7590	12/08/2009		
FAY SHARPE LLP 1228 Euclid Avenue, 5th Floor The Halle Building Cleveland, OH 44115			EXAMINER VU, MINDY D	
			ART UNIT 2884	PAPER NUMBER
			MAIL DATE 12/08/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/526,799

**Applicant(s)**

COCHRAN ET AL.

**Examiner**

MINDY VU

**Art Unit**

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/200)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to Applicant's amendment filed September 12, 2009.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 8-9, 21-22 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenway (US 6,346,704) in view of Crall (US 4,814,870).

With respect to independent Claim 1, Kenway discloses a system for providing snapshot action thermal imaging within automated process control article inspection applications (abstract) comprising: energizing components within an inspected part or

process by applying a controlled voltage or current to the components (Col. 8 lines 14-17); a thermal infrared imager (Col. 8 lines 21-24) configured to support snapshot-mode image acquisition (Col. 4 lines 1-2); an image acquisition zone (Fig. 2) configured to support the snapshot-mode image acquisition of a part or process; an image processor configured to receive and process output of the imager in a manner which reduces a two-dimensional infrared spatial image or data set produced by the imager into a specific set of quality- or process-related attributes associated with the part or process within the image acquisition zone; and a control electronics module configured to provide image acquisition control signals within the system (Col. 8 lines 37-53).

Kenway discloses an IR imager but omits a lead salt-based detector. However, Kenway suggests any type of infrared detector that have appropriate acquisition speed and mode for snapshot action is suitable for the invention (Col. 3 line 55-Col. 4 line 2). Crall discloses a lead selenide (PbSe) detector is known in the art for snapshot action in an infrared imaging apparatus (Col. 1 line 25-Col. 2 line 27). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a lead salt-based detector in Kenway because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art in view of snapshot acquisition and optimizing resolution.

With respect to Claims 8 and 9, Kenway discloses a thermal energy stimulus used for imparting thermal energy to the part or process for differentiating defective

parts from acceptable parts and wherein the thermal energy stimulus is implemented as an induction-type heater (Col. 8 lines 14-17).

With respect to Claim 21, Kenway discloses thermal infrared energy is added to the part by electrically energizing components associated with the part (Fig. 3)

With respect to Claims 22, Kenway discloses a status enunciator used to indicate a status of the part or process under inspection (Col. 4 lines 40-44).

With respect to Claim 26, Kenway discloses the status enunciator is implemented as a marking device which acts to mark parts determined to be below or, alternately, above a predefined quality level (Col. 5 lines 49-51).

With respect to Claim 27, Kenway discloses the status enunciator is implemented as a print or display report writer that acts to provide a part-by-part quality report (Col. 8 lines 50-53).

With respect to Claim 28, Kenway discloses the status enunciator is implemented as a print or display report writer that acts to provide a cumulative archive of article quality (Col. 7 lines 5-8).

With respect to Claim 29, Kenway discloses the status enunciator is implemented as a module that electronically communicates part or process status in a manner which facilitates closed loop control of a manufacturing process (Col. 5 lines 49-51).

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenway (US 6,346,704) in view of Crall (US 4,814,870) and further in view of Ulrichsen et al. (US 6,353,197, hereafter Ulrichsen).

With respect to Claim 2, Kenway discloses the objects are inspected in consecutive positions in their manufacture (Fig. 1) but omits an automated conveyance device for doing the inspection. Ulrichsen discloses a belt conveyor is known for inspecting matter for varying composition (Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a conveyor belt as suggested by Ulrichsen in the detection station in view of easier in inspection the objects (Col. 6 lines 63-64).

With respect to Claim 3, Kenway discloses a part detect or presence sensing device which interfaces to the control electronics module and provides the system an indication of the presence of a part requiring inspection (Col. 5 lines 35-38).

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenway (US 6,346,704) in view of Crall (US 4,814,870) and further in view of Triner et al. (US 5,936,353, hereafter Triner).

With respect to Claims 4-7, Kenway discloses a thermal imaging device for inspection applications but omits a thermal baffle disposed within the inspection zone to shield the imager from deleterious thermal infrared energy. Triner discloses an inspection device comprising a baffle to shield the imager from deleterious thermal infrared energy and a thermal-electric cooler to cool the baffle (Col. 4 lines 10-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a baffle and cool the baffle using thermo-electric coolers as suggested by Triner in view of improving the detection signal.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenway (US 6,346,704) in view of Crall (US 4,814,870) and further in view of Wasmund et al. (US 2004/0003680, hereafter Wasmund).

With respect to Claims 10-12, Kenway discloses a thermal energy stimulus is implemented as an induction and silent about other types of heater. Wasmund discloses that it is known in the art to use an infrared, microwave, laser, induction, and/or ultrasonic heater for directly or indirectly heating the object (paragraph 0042). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to choose the appropriate heating elements since those heaters are well known in the art.

Claims 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenway (US 6,346,704) in view of Crall (US 4,814,870) and further in view of Robbins (US 4,704,660).

With respect to Claims 13-17, Kenway discloses a thermal energy stimulus is implemented as an induction but omits the thermal energy stimulus is implemented as a quartz halogen lamp. Robbins discloses the use of quartz halogen lamp as a high-intensity source for illumination system (Col. 6 line 49-68). Robbins also discloses the energy emitted by the lamp is exchanged by way of natural convection or by way of forced air flow (Col. 17 lines 16-52). Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention was made to include a quartz halogen lamp in view of choosing the appropriate a heating element for the invention.

Claims 13 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenway (US 6,346,704) in view of Crall (US 4,814,870) and further in view of Woodall et al. (US 5,814,840, hereafter Woodall).

With respect to Claims 13 and 18-20, Kenway discloses a thermal energy stimulus is implemented as an induction but omits the thermal energy stimulus is implemented as a glowbar. Woodall discloses that glow bars are well known in the art for heating elements (Col. 1 lines 33-36). Woodall also discloses the energy emitted by the glowbar is exchanged by way of natural convection or by way of forced air flow (Col. 4 lines 31-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to choose the appropriate heating elements since those heaters are well known in the art.

Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenway (US 6,346,704) in view of Crall (US 4,814,870) and further in view of Meyer et al. (US 2003/0222002, hereafter Meyer).

With respect to Claim 23, Kenway discloses a controller for making a pass/fail or grading decision but omits a mechanical reject mechanism which acts to remove specific parts from a manufacturing process. Meyer discloses a method of automatically sorting and placing parts for inspection comprising the removal stations for accept or



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reject the inspection parts according to inspection criteria received from the controller (paragraph 0037). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the removal stations as suggested by Meyer in view of improving the inspection process.

With respect to Claim 24, Meyer discloses the reject mechanism is an air valve (paragraph 0037).

With respect to Claim 25, Meyer discloses the reject mechanism is a solenoid actuator (paragraph 0037).

Claims 30 and 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weitzel et al. (US 2002/0089561, hereafter Weitzel) in view of Crall (US 4,814,870).

With respect to independent Claims 30 and 36, Weitzel discloses a method for providing snapshot action thermal infrared imaging within an automated process control article inspection application (abstract), the method comprising the steps of: energizing components within an inspected part or process by applying a controlled voltage or current to the components (paragraph 0044); simultaneously integrating thermal infrared signals within all pixel sites of an imager based on image acquisition control signals provided by an electronics control module (paragraphs 0055 & 0073); providing a sequence of two-dimensional infrared spatial images or data sets based on the pixel site integrating to a processor (paragraph 0056); and processing the two-dimensional

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infrared spatial images or data sets into a set of quality- or process-related attributes associated with a part or process under inspection (paragraph 0016 & 0017).

Weitzel discloses a series of detectors but omits a lead salt-based detector. However, Weitzel suggests any type of detectors that are able to detect varying levels of light falling on them is suitable for the invention (paragraph 0046). Crall discloses a lead selenide (PbSe) detector is known in the art for snapshot action in an infrared imaging apparatus (Col. 1 line 25-Col. 2 line 27). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a lead salt-based detector in Weitzel because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art in view of snapshot acquisition and optimizing resolution.

With respect to Claim 32, Weitzel discloses the step of applying thermal energy to parts under inspection for the purpose of differentiating defective parts from acceptable parts (paragraph 0048).

With respect to Claims 33 and 37, Weitzel discloses the step of generating a status report based on the processing (paragraph 0048).

With respect to Claims 34 and 38, Weitzel discloses the step of proving the status report to a status enunciator (paragraph 0048).

With respect to Claims 35 and 39, Weitzel discloses the step of using the status report to automatically alter parameters of a manufacturing process (paragraph 0048).

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weitzel et al. (US 2002/0089561, hereafter Weitzel) in view of Crall (US 4,814,870) and further in view of Ulrichsen et al. (US 6,353,197, hereafter Ulrichsen).

With respect to Claim 31, Weitzel discloses the objects are inspected in consecutive positions in their manufacture but omits an automated conveyance device for doing the inspection. Ulrichsen discloses a belt conveyor is known for inspecting matter for varying composition (Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a conveyor belt as suggested by Ulrichsen in the detection station in view of inspecting the objects (Col. 6 lines 63-64).

### ***Response to Arguments***

Applicant's arguments filed September 12, 2009 have been fully considered but they are not persuasive.

In response to Applicant's argument that Kenway teaches away from the use of a lead-salt imager, Examiner notes that col. 1 lines 51-54 of Kenway does not state that the typical IR scanner would use cooled systems or microbolometers as the Applicant points out. The Federal Circuit held that "the fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another." *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000). Here, that the benefit gained by using

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a lead selenide (PbSe) detector as disclosed by Crall may come at the expense of additional cost and effort of using other imagers as disclosed by Kenway should not nullify its use as the basis to modify the Kenway imaging. The mere omission of a particular detector type is not a criticism, discrediting or discouragement. It is a simple substitution of one known, equivalent element for another to obtain predictable results (KSR at 1395). Moreover, Kenway does suggest any type of infrared detector that have appropriate acquisition speed and mode for snapshot action is suitable for the invention (Col. 3 line 55-Col. 4 line 2). Crall discloses a lead selenide (PbSe) detector is known in the art for snapshot action in an infrared imaging apparatus (Col. 1 line 25-Col. 2 line 27). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a lead salt-based detector in Kenway because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art in view of snapshot acquisition and optimizing resolution.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINDY VU whose telephone number is (571)272-8539. The examiner can normally be reached on M-F 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Porta/  
Supervisory Patent Examiner, Art  
Unit 2884

mv